

RCRA FACILITY ASSESSMENT EVALUATION
PRELIMINARY REVIEW, VISUAL SITE INSPECTION
AND SAMPLING VISIT

Region 6, RCRA Permits Closure Section

FACILITY'S NAME(S): American Chrome & Chemicals, Inc.

EPA ID NUMBER: TX0000010339

ADDRESS: P. O. Box 9912

LOCATION: Buddy Lawrence Drive, Corpus Christi

DATE OF INSPECTION: July 20-21, 1987

SITE DESCRIPTION: Manufacturing of Chromium Chemicals

PREPARED BY: Pope-Reid Associates DATE PREPARED: August 1987

REVIEWED BY: K. N. Phillips/Y. Kim DATE REVIEWED: July 1989

FACILITY STATUS: LD-Closure

ANTICIPATED PERMIT DATE: _____ CLOSURE PLAN APPROVED DATE: _____

ANY ON-GOING STATE/FED 264, 265, or 270 CORRECTIVE ACTION OR CERCLA ACTION: Yes

DOES FACILITY HAVE A CERCLA FILE? YES X NO _____

When was a CERCLA PA/SI performed at this facility: 4/22/85

DOES FACILITY HAVE UIC WELL? YES _____ NO X TYPE N/A

TYPE OF DRINKING WATER SUPPLY WITHIN A 3-MILE RADIUS: SW (Inland Reservoir)

TARGET POPULATION WITHIN A 3-MILE RADIUS: 4,000 est.

RECOMMENDATIONS: SV X IM X RFI No RFI

(Indicate only one unless IM is marked)

Permit: X 3004(u) 3004(v)

Possible Enforcement Action: 3008(a) 3008(h)



I. EVALUATION

A. NUMBER OF SWMU(s)/AOC(s) INVESTIGATED DURING THE PR/VSI: 53

1. NUMBER OF SWMU(s) INVESTIGATED DURING THE PR/VSI: 51

<u>#</u>	<u>LIST OF SWMU</u>	<u>REGULATED BY RCRA*</u>	<u>STATUS**</u>
1.	Waste Monoethanolamine Tank	?	A
2.	Waste Mud tank	?	A
3.	Residue Surge Tank	?	A
4.	Residue Head Tank	?	A
5-8.	Residue Treatment Tanks	?	A
9-11.	Secondary Treatment Tanks	?	A
12.	Surface Drainage Tank	?	A
13.	Waste Oil Tank	N	I
14-15.	Chromic Acid Plant Cooling Tower Basin	N	A
16-18.	Chromic Plant Cooling Tower Basins	N	A
19.	Power Plant Cooling Tower Basin	N	A
20.	Chromic Oxide Process	N	A
21.	Chromic Acid Plant Settling Basin	N	A
22.	West Pond	N	A
23.	Middle Pond	N	A
24.	East Pond	N	A
25.	No. 6 Sump Area	N	A
26.	No. 9 Sump Area	N	A
27.	Settling Basin	N	A
28.	Waste Area No. 1	N	I
29.	" " No. 2	N	I
30.	" " No. 3	N	I
31.	" " No. 4	N	I
32.	" " No. 5	N	I
33.	" " No. 6	N	A
34.	" " No. 7	N	I
35.	" " No. 8	N	I
36.	Asbestos Landfill	N	I
37.	Soda Ash Solids Deposition Area	N	I
38.	Waste Refractory Material Storage Area	N	I
39.	PCB and Asbestos Storage Area	N	A
40.	Contaminated Refuse Roll-Off Bin	N	A
41.	Waste Trays	N	A
42.	Trash Dumpsters	N	A
43.	Chromate Plant Process Sewers and Sumps	N	A
44.	Chromium Processing Area Stormwater Sewers	N	A
45.	Chromic Acid Plant Drains and Sumps	N	A
46.	Piping to Waste Areas	N	A
47.	Chromic Oxide Process Wastewater Piping	N	A
48-50.	Chromate Plant Filter Presses	N	A
51.	Sea Water Flume	N	A

2. AREAS OF CONCERN: 2

LIST OF AOC

1. Chromate Plant Area (AOC "A")
2. Oil Leakage Area (AOC "B")

* Y-Yes, N-No, (?) Uncertain

** A-Active, I-Inactive, C-Closed

B. SAMPLING VISIT (See the Sampling Visit Report for details)

SWMU OR AOC SAMPLING LOCATION	SAMPLE/MEDIA SAMPLE TYPE (GRAB. COMPOSITE)	PARAMETERS	RESULTS OF MOST PREVALENT CONSTITUENTS (mg/kg)
Sample 001 SWMU #20 Chromic Oxide Process Wastewater Tank	Soil/Grab	Metals:	<div>Chromium</div> <div>4774</div> <div>Lead</div> <div>78</div> <div>Zinc</div> <div>472</div>
		Volatile	<div>Trimethylethylbenzene</div> <div>0.28</div>
		Semi-volatile	<div>Acenaphthlene</div> <div>0.30</div> <div>Fluorene</div> <div>0.37</div> <div>Phenanthrene</div> <div>21.60</div> <div>Benzo(a) Anthracene</div> <div>43.80</div> <div>Bis-(2-ethylhexyl) Phthalate</div> <div>43.8</div> <div>Benzo(a) Pyrene</div> <div>20.3</div>

B. SAMPLING VISIT (See the Sampling Visit Report for details) - continued

SWMU OR AOC SAMPLING LOCATION	SAMPLE/MEDIA SAMPLE TYPE (GRAB. COMPOSITE)	PARAMETERS -	RESULTS OF MOST PREVALENT CONSTITUENTS (mg/KG)
Sample 002 SWMU #27 Settling Basin	Soil/Grab	<p>Metals:</p> <p>Volatile</p> <p>Semi-volatile</p>	<p>Arsenic 23</p> <p>Selenium 1</p> <p>Chromium 1264</p> <p>Copper 25</p> <p>Lead 166</p> <p>Zinc 382</p> <p>No data available from the analysis in Appendix E</p> <p>No data available from the analysis in Appendix E</p>

B. SAMPLING VISIT (See the Sampling Visit Report for details) - continued

SWMU OR AOC SAMPLING LOCATION	SAMPLE/MEDIA SAMPLE TYPE (GRAB. COMPOSITE)	PARAMETERS -	RESULTS OF MOST PREVALENT CONSTITUENTS (mg/KG)
Sample #003 Background	Soil/Grab	Metals	Arsenic 3
			Mercury 0.68
			Chromium 56
			Copper 86
			Lead 360
			Nickel 253
			Zinc 1053
		Volatile	N. D.
		Semi-volatile	Fluoranthene 0.16
			Pyrene 0.12
			Bis - (2-ethylhexyl) Phthalate 2.5

C. NUMBER OF SWMU(s)/AOC(s) FOR WHICH AN RFI IS RECOMMENDED: 24 / 2
(Except RCRA units subject to Subpart F groundwater issues refer to Section D)

1. NUMBER OF SWMU(s)/AOC(s) AT WHICH RELEASES HAVE BEEN IDENTIFIED: 5 / 1

<u>SWMU/AOC NO.</u>	<u>RELEASE TO</u>	<u>NOTED DOCUMENTATION OF RELEASE</u>
1. Chromic Oxide, Process Wastewater Tank (SWMU #20)	Soil/GW	During the VSI, stained soil, stressed vegetation, and an oily residue covering portions of the area around the tank were observed. Data from sampling visit indicate that soil underneath the tank was contaminated by chromium 4774 mg/kg.
2. Settling Basin (SWMU #27)	Soil/GW	Results from the sampling visit confirms the unit receives hazardous constituents, (I.B., this report, and Table 3-2 of SV report). The unit is an unlined surface impoundment. The impact of this unit on the current GW contamination problem has yet to be clarified. soil sample indicates arsenic (28mg/kg), chromium (1264 mg/kg), lead (106 mg/kg), etc. contamination.
3. Waste Area No. 2 (SWMU #29)	Soil/GW	Through investigations conducted by the TWC, this unit has been identified as one of the primary sources of chromium GW contamination. Unit is unlined with clay soil dikes that have become eroded in places (Ref. Dames and Moore, Hydrological Studies and Investigation of Cr ⁶⁺ ----- Jan. 1982).
4. Waste Area No. 5 (SWMU #32)	Soil/GW	This unit was found to be a source of run-off containing hexavalent chromium in a TWC investigation (Ref. Dames and Moore, Hydrological Studies and Investigation of Cr ⁶⁺ ----- Jan. 1982). During the VSI, a greenish stain was observed on the dike/road as well as in the ditch outside the containment dikes of the unit. Unit was only partially covered with soil and sparse vegetation.

<u>UNIT/AREA NO.</u>	<u>RELEASE TO</u>	<u>NOTED DOCUMENTATION OF RELEASE</u>
1. Chromate Plant Process Ponds and Sumps (SNU 583)	Soil/GW	The unit has been identified as one source of chromium (VI) contamination in the plant area (Ref. Pope-Retz Associates, July 20 and 21, 1987, VSI Logbooks). At the time of the VSI, corrective measures had not been taken to stop further releases.
2. Chromate Plant Area (SNU 583)	Soil/GW	TRC had identified the Chromate Plant area as a source of extensive ground water contamination (Ref. Hydrological Studies and Investigation of Cr ^{VI} --- -- Jan. 1982). Concentration of chromium is as high as 4000 mg/l. Concentrations in the GW of this area have not been reduced in 5 years.

2. NUMBER OF SNUK/ROCs AT WHICH A RELEASE IS HIGHLY POSSIBLE: 16 / 1

<u>LIST OF SNUK</u>	<u>MEDIA</u>	<u>NATURAL/CONCERN</u>
1. Power Plant Cooling Tower Basin ((SNU 619)	Soil/GW	During the VSI, the visible portion of the basin was corroded and spillage was evident on the outside of the basin walls. The spillage presumably went onto the unpaved soil around the unit.
2-4. West, Middle and East Ponds (SNU 22-24)	Soil/GW	The units are located in an area where groundwater is contaminated by hexavalent chromium. The units also are identified as the source of sulfidic odors. The units are unlined surface impoundments which receive wastewater containing trivalent and hexavalent chromium. Dikes of the impoundments are constructed of soil and high-lime chromate residue.
5. Sump Area No. 6 (SNU 25)	Soil/GW	The sump was not visible during the VSI because it was submerged. The pump for the sump was inoperative. The unit is in an area where groundwater is contaminated with hexavalent chromium. Dead vegetation was present at the margin of the unit.
6. Sump Area No. 7 (SNU 26)	Soil/GW	During the VSI, leachate was present outside the dike west of the unit. Dead vegetation was present at the sump area margins. The unit is located in an area where groundwater is contaminated.

<u>SWMU/AOC NO.</u>	<u>RELEASE TO</u>	<u>NOTED DOCUMENTATION OF RELEASE</u>
7. Waste Area No. 1 (SWMU #28)	Soil/GW	The unit is unlined and uncapped. At the time of the VSI, the unit received chromate high-lime residue and bad reaction batches of off-spec sodium chromate and sodium dichromate. The highest chromium level in the GW is approximately 500 feet downgradient from the unit. During the VSI, water tinted blue was observed in shallow depressions north and east of the unit. Dikes for the unit were severely eroded. Runoff from this unit is poorly contained and allowed to flow indiscriminately to the east and north.
8. Waste Area No. 3 (SWMU #30)	Soil/GW	The unit is in an area where chromium-contaminated GW has been found by TWC. The unit may have a liner, but no documentation is available. Dikes are clay soil.
9. Waste Area No. 4 (SWMU #31)	Soil/GW	The unit is unlined and has received chromate high-lime residue which was only partially treated to reduce the hexavalent chromium. The unit is located in an area with chromium contaminated GW.
10. Waste Area No. 6 (SWMU #33)	Soil/GW	The unit is an unlined surface impoundment which has received high-lime chromate. Unit is located in an area with chromium contaminated GW. During the VSI, ponding of runoff was observed in contact with chromium wastes, which is conducive to leachate generation. It was observed during the VSI that a portion of the waste area had been diked and residues were being actively deposited within the diked areas. The west and south ends were flooded by water in the No. 5 Sump area (SWMU #25).
11. Waste Area No. 7 (SWMU #34)	Soil/GW	The unit is an unlined surface impoundment. The unit has received high-lime chromate residue and is located in an area where the GW is contaminated with hexavalent chromium. During the VSI, greenish-blue water and leachate deposits were observed outside of a ditch on the west and south sides of the unit.

<u>SWMU/AOC NO.</u>	<u>MEDIA</u>	<u>RATIONALE/CONCERN</u>
12. Waste Area No. 8 (SWMU #35)	Soil/GW	The unit was originally an unlined surface impoundment. It now has the appearance of a landfill. The unit received high-lime chromate residue. During the VSI, extensive greenish-blue staining outside of the soil dikes along the northern margin of the area was observed. The area within 150 feet of the northern boundary of the unit was devoid of vegetation. The unit is in an area where GW is contaminated with hexavalent chromium.
13. Soda Ash Solids Deposition Area (SWMU #37)	Soil/GW	The unit is an unlined landfill. Hazardous constituents were deposited in this area. During the VSI it was noted that much of the area was previously covered by substantial vegetation.
14. Waste Refractory Material Storage (SWMU #38)	Soil/GW	The unit is an asphalt pad, on which refractory material contaminated with hexavalent chromium is piled for temporary storage. Run-off is not contained or controlled and is allowed to drain directly to surrounding soil prior to reaching stormwater sewer system.
15. Piping to Waste Areas (SWMU #46)	Soil	The piping appeared unmaintained, corroded, in poor condition, and is located on unpaved soil over most of its length.
16. Oil Leakage Area (AOC "B")	Soil/GW	An underground pipe is leaking oil. During the VSI, soil heavily stained with oil and yellow deposits was observed. This leak has been occurring since 1960. The amount of seepage has decreased in the last 2 years, possibly indicating the migration pathway may have been altered by GW Pump and Treat programs. Facility representatives stated they had never tried to find the exact source of the leakage.

3. NUMBER OF SWMU(s)/AOC(s) WHERE A DETERMINATION CANNOT BE
MADE DUE TO LACK OF INFORMATION: 4 / 0

LIST OF SWMU

RATIONALE

1-3. Chromate Plant
Cooling Tower Basins
(SWMU #16-18)

The integrity of basin is unknown. The basins are over twenty years old and a release potential exists if cracks or holes are present.

4. Asbestos Landfill
(SWMU #35)

The unit is an unlined landfill. It has received asbestos diaphragm cells and other asbestos wastes from the Chlor-Alkali plant. Chlorinated organics could have been disposed of with the asbestos waste.

D. NUMBER OF SWMU(s)/AOC(s) FOR WHICH AN RFI IS NOT RECOMMENDED: 27 / 0

LIST OF SWMU

RATIONALE

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|--|---|
| 1. Waste Monoethanolamine Tank (SWMU #1) | The unit is above-ground on a concrete paved area. No evidence of release was observed during the VSI. |
| 2. Waste Mud Tank (SWMU #2) | This tank is above-ground in good condition. No evidence of release was observed during the VSI. |
| 3. Residue Surge Tank (SWMU #3) | The unit is located on a concrete pad and appeared to be in good condition. No evidence of release was observed during the VSI. |
| 4. Residue Head Tank (SWMU #4) | The unit is an above-ground and closed-topped tank. No evidence of release was observed during the VSI. |
| 5. Residue Treatment Tanks (SWMU #5-11) | The units are closed-topped and above-ground tanks. No evidence of release was observed during the VSI. |
| 6-8. Secondary Treatment Tanks (SWMUs #9-11) | The units are on-ground and open-topped tanks with concrete foundations. No evidence of release was observed during the VSI. |
| 9. Surface Drainage Tank (SWMU #12) | The unit is a closed-topped and above-ground steel tank. No evidence of release was observed during the VSI. |
| 10. Waste Oil Tank (SWMU #13) | The unit is a closed-topped and above-ground steel tank. No evidence of release was observed during the VSI. |
| 11-12. Chromic Acid Plant Cooling Tower Basin (SWMUs #14-15) | The basins were recently built (in 1984). No evidence of release was found during the VSI. |
| 13-15. Chromate Plant Cooling Tower Basins (SWMUs #16-18) | The units are below-ground concrete basins. No evidence of release was observed during the VSI. |
| 16. Chromic Acid Plant Settling Tank (SWMU #21) | The unit was recently built on a concrete-paved area and is an above-ground and closed-topped tank. No evidence of release was observed during the VSI. |
| 17. PCB and Asbestos Storage Areas (SWMU #39) | The unit is in an enclosed building with a concrete floor. No evidence of release was observed during the VSI. |

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|---|---|
| 18. Contaminated Refuse
Roll-off Bin
(SWMU #40) | The unit is a steel bin resting on a concrete pad. No evidence of release was observed during the VSI. |
| 19. Waste Trays
(SWMU #41) | The units are constructed of metal and open topped. No evidence of release was observed during the VSI. |
| 20. Trash Dumpsters
(SWMU #42) | The units are steel bins. No evidence of release was observed during the VSI. |
| 21. Chromium Processing
Area Stormwater
Sewers (SWMU #44) | The unit consists of drains, sumps and underground piping. No evidence of releases were proven at the time of the VSI. |
| 22. Chromic Acid Plant
Drains and Sumps
(SWMU #45) | The unit consists of drains and sumps. Waste is pumped to the settling tank. No evidence of release was observed during the VSI. |
| 23. Chromic Oxide Process
Wastewater Piping
(SWMU #47) | The units consist of on-ground steel and flexible hose piping. No evidence of release was observed during the VSI. |
| 24-26. Chromate Plant
Filter Presses
(SWMUs #48-50) | The units are located in a metal structure on a platform above a paved area. No evidence of release was observed during the VSI. |
| 27. Sea Water Flume
(SWMU #51) | The unit consists of a concrete ditch and concrete piping. The ditch is above-ground and the piping is underground. No evidence of release was observed during the VSI. |

- E. SUPPLEMENTAL INFORMATION ON RCRA REGULATED UNITS: 0
(Describe any additional problems identified or suspected from regulated units including identified releases to groundwater.)

II. FINDINGS

A. RECOMMENDATIONS:

- 1) Contractor: (1) No further action for twenty-eight (28) SWMUs. SWMU Nos. are 1-8, 13-15, 21, 28-35, 39-42, and 47-50.

(2) Suggested Actions for twenty-one(21) SWMUs and two (2) Areas of Concern: SWMU Nos. are 9-12, 16-19, 22-26, 36-38, 43-46 and 51. The actions are (a) to determine the integrity of the unit, (b) pressure test, (c) to verify regulatory status, (d) to construct a secondary containment, (e) soil sampling, (f) to continue with closure, etc.

(3) RFI for two (2) units: SWMU Nos. 20 and 27.
- 2) EPA: Recommends an RFI for twenty-four (24) SWMUs and two (2) Areas of Concern in Section C of this evaluation.

B. ADDITIONAL COMMENTS:

- 1) The facility is presently undergoing a Pump and Treat program for GW contamination. The GW contamination is extensive and over the past five years the corrective measures taken have done little or nothing to improve the situation.
- 2) Regulatory status of SWMUs 1-12 is uncertain due to a temporary exclusion for the K006 wastes at the facility. The exclusion was ultimately denied November 14, 1986. However, the facility is still storing hazardous K006 wastes on site and commingling nonhazardous wastes with existing hazardous waste. (See memo dated on Feb.1988, Regulatory Status; to file.)

CONCUR: Bill Luthans

DATE: 7/28/89